Amendments to the Drawings:

Please insert the attached sheets of Figure 8.

Attachment: Figure 8

Remarks/Arguments:

Applicant's have amended the claims to more clearly point out the invention. Applicant's have provided for the first time a simple method of determining if a MurD enzyme is an activator-independent enzyme.

Upon entry of the present Amendment, claims 1 and 7-9 are pending. Support for new claim 9 can be found on page 2, lines 16-19 and lines 26 to 30.

Specification Objections

Applicant's have re-introduced Figure 8. This figure was filed in the parent application GB 0224997.7. No new matter has been added.

Applicant's submit herewith a new sequence listing. Applicants have also added a sequence identifier to the sequence in the disclosure on page 3, lines 1-10 and to each of the sequences of figure 8. Original claim 5 has been canceled rendering the objection of claim 5 mute.

Applicants believe that the specification is now in order.

Rejection of claims 1-5 and 7 Under § 35 U.S.C 102(b)

Claims 1-5 and 7 have been rejected under 35 U.S.C 102(b) as being anticipated by Walsh et al. (1991 J. Bact 181, 5395-5401, hereinafter Walsh).

It is well established that a claim is anticipated only if each and every element is expressly or inherently described in a single reference (MPEP at 2131, Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). Applicant's note that claim 1 has been amended to depend from new claim 9. New claim 9 is directed to a method of determining if a MurD enzyme is an activator-independent MurD enzyme. The method includes aligning a test MurD enzyme with SEQ ID NO:2, and identifying if the test MurD comprises one or more common amino acid residues with amino acids at positions K96, C112, G116, T126, M129, L133, N296, S298 and I422 of SEQ ID NO:2. The presence of one or more common amino acids in the test MurD indicates that the test MurD enzyme is an activator-independent MurD

enzyme. Walsh does not teach a method of aligning a test MurD enzyme with SEQ ID NO:2 and determining for the presence of common amino acids at particular positions. Since Walsh fails to teach this method, claim 9, and claims that depend from claim 9, are not anticipated.

Rejection of claims 1-5 and 7-8 Under § 35 U.S.C 103

Claims 1-5 and 7-8 are rejected as allegedly obvious over Walsh in view of Tanner et al. (J. Org. Chem. 61, 1756-1760, 1996).

The present invention is based on the determination that MurD enzymes from different bacteria can exhibit different biochemical properties. Specifically, Applicants found that MurD from *Escherica coli (E.coli), Haemophilus influenzae (H. influenzae)* and *Staphylococcus aureus (S. aurueus)* are activated in the presence of salt (activator dependent) while *Enterococcus faecalis (E. faecalis)* is not activated by salt (activator independent). Applicants thereafter performed a sequence alignment and were able to identify particular amino acids that were indicative as to whether a MurD enzyme is an activator dependent or independent enzyme (for example, at position 96 of *E. faecilis,* which is activator independent, there is a lysine (K), while for the other species of bacteria, which are activator-dependent, a glucine (G) is present, see figure 8). Based on this observation, Applicant's provide herewith a method of determining if a MurD enzyme is an activator independent enzyme. The present method involves aligning a test MurD sequence against SEQ ID NO:2, the sequence of *E. faecilis*, and determining if the test MurD sequence comprises one or more common amino at positions K96, C112, G116, T126, M129, L133, N296, S298 and I422 of SEQ ID NO:2. The presence of common amino acids at one or more of these positions in the test MurD indicates that the test MurD sequence is activator-independent.

Walsh does not teach or suggest such a method. In fact Walsh teaches away from the present method. Walsh teaches that both *E. facaelis* and *Staphlococcus Aureus (S. Aureus*) are activator-independent enzymes. However, this is not true. As shown by Applicants, and contrary to the teaching in Walsh, *S. Aureus* is NOT an activator independent enzyme. Thus one skilled in the art following the teaching in Walsh would never have been able to identify the particular amino acids that are unique to activator-independent MurD enzymes. In light of this, Walsh does not render obvious the claimed invention.

With regard to Tanner, Tanner teaches synthesis of inhibitors of MurD. There is no teaching in Tanner of a method involving sequence alignment for determining if a MurD is an activator-independent MurD. The combination of Walsh and Tanner does not make the presently claimed method obvious.

Rejection of claims 1-5 and 7-8 Under § 35 U.S.C 103

Claims 1-5 and 7-8 are rejected as alledegly obvious over Walsh in view of El-Sherbeini et al. (Gene 210, 117-125, 1998; hereinafter El-Sherbeini) and Bouhss et al. (Biochem. 38 12240-12247, 1999)

As discussed above, Walsh fails to teach or suggest the present invention. El-Sherbeini and Bouhss were cited to render original claim 8 obvious. Claim 8 has been canceled therefore rendering the rejection of this claim mute.

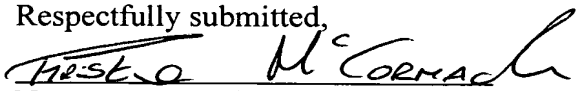
Conclusion

Applicants believe the application is in condition for allowance, which action is respectfully requested.

A petition for a three month extension of time is being filed herewith, the Commissioner is hereby authorized to charge any deficiency in the fees or credit any overpayment to deposit account No. 50-3231, referencing Attorney Docket No. 100874-1P US.

Although Applicants believe no excess claim fees are due, the Commissioner is hereby authorized to charge any deficiency in the fees or credit any overpayment to deposit account No. 50-3231, referencing Attorney Docket No. 100874 –1P US.

Respectfully submitted,



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